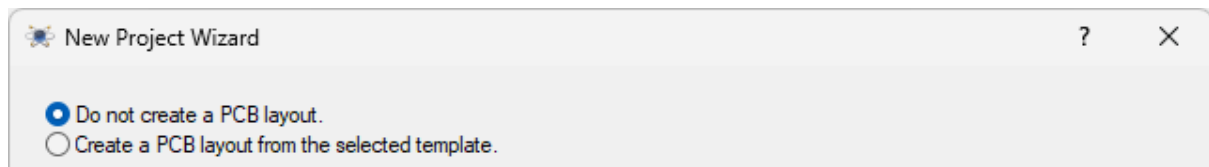
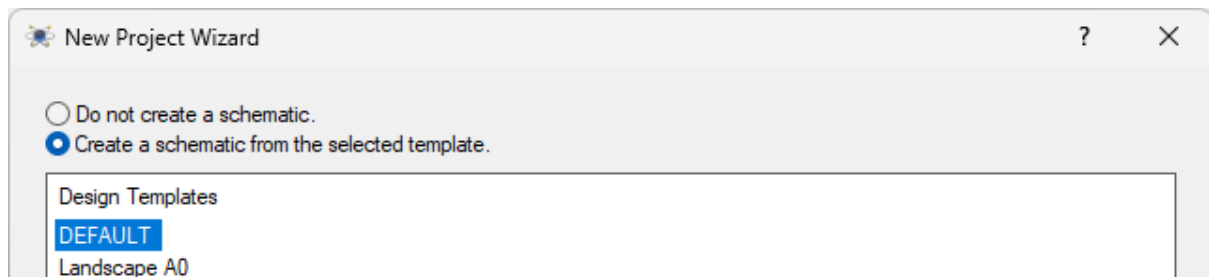
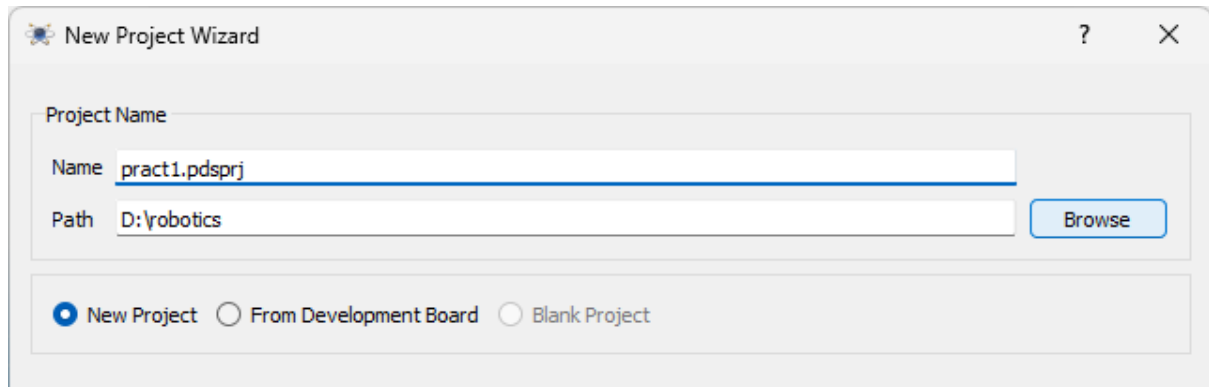


Practical 3

Aim: - Write Python code to test motors.

Step 1: Create a new proteus project

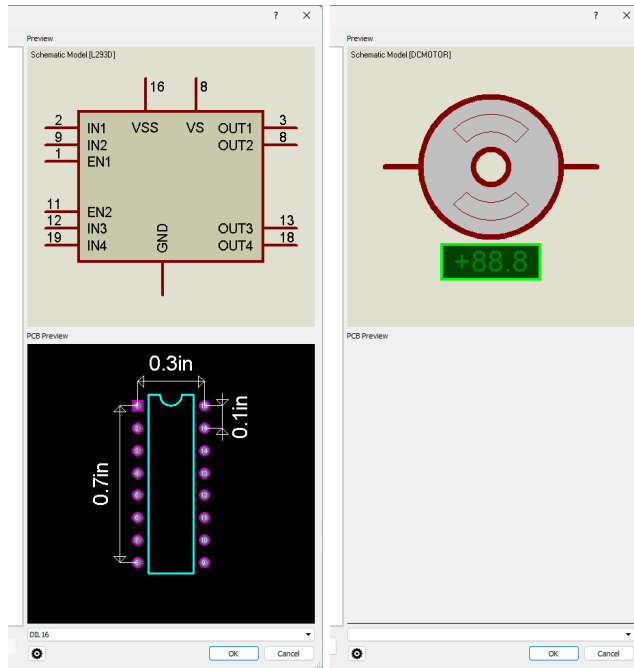


Step 2: Select Raspberry pi as option under Create Firmware Project

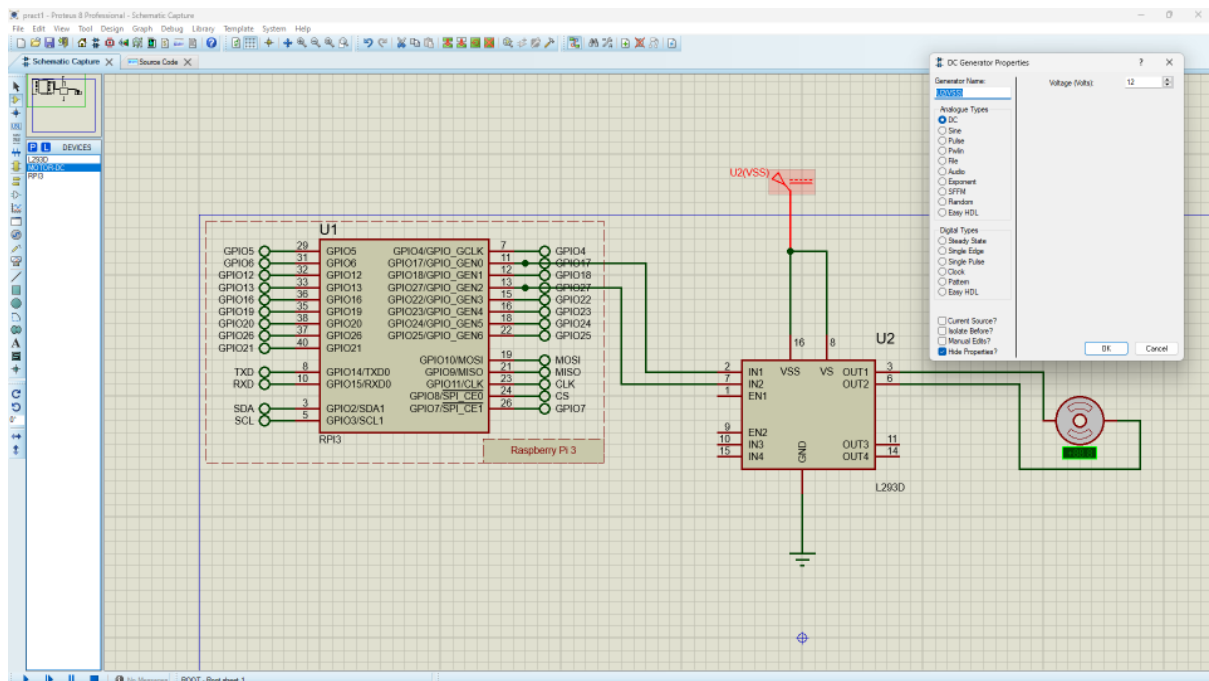


Step 3: Add the components necessary to test the motor.

- DC (Generators) (Set to 12 Volts)
- MOTOR-DC (Devices)
- L293D (Devices)
- GROUND (Terminals)



Step 4: Complete the connections

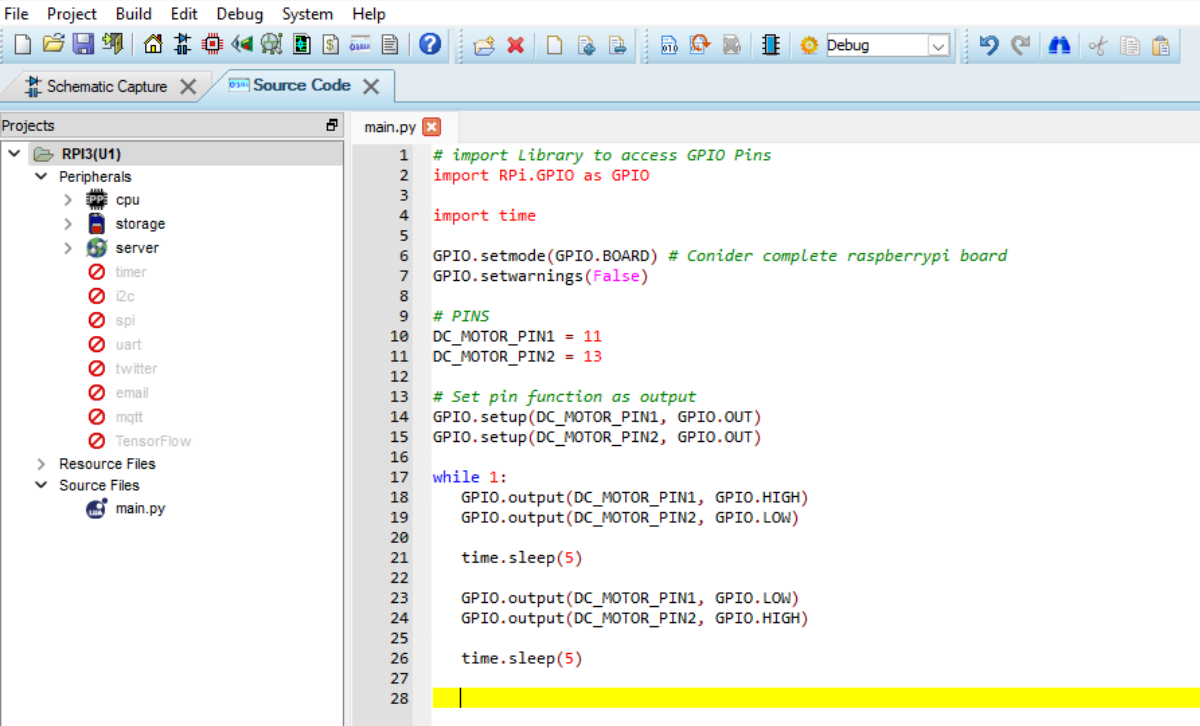


Step 5: Edit the source code with appropriate pins for motor control

```
# import Library to access GPIO Pins
import RPi.GPIO as GPIO
import time

GPIO.setmode(GPIO.BOARD) # Conider complete raspberrypi board
GPIO.setwarnings(False)
# PINS
DC_MOTOR_PIN1 = 11
DC_MOTOR_PIN2 = 13
# Set pin function as output
GPIO.setup(DC_MOTOR_PIN1, GPIO.OUT)
GPIO.setup(DC_MOTOR_PIN2, GPIO.OUT)

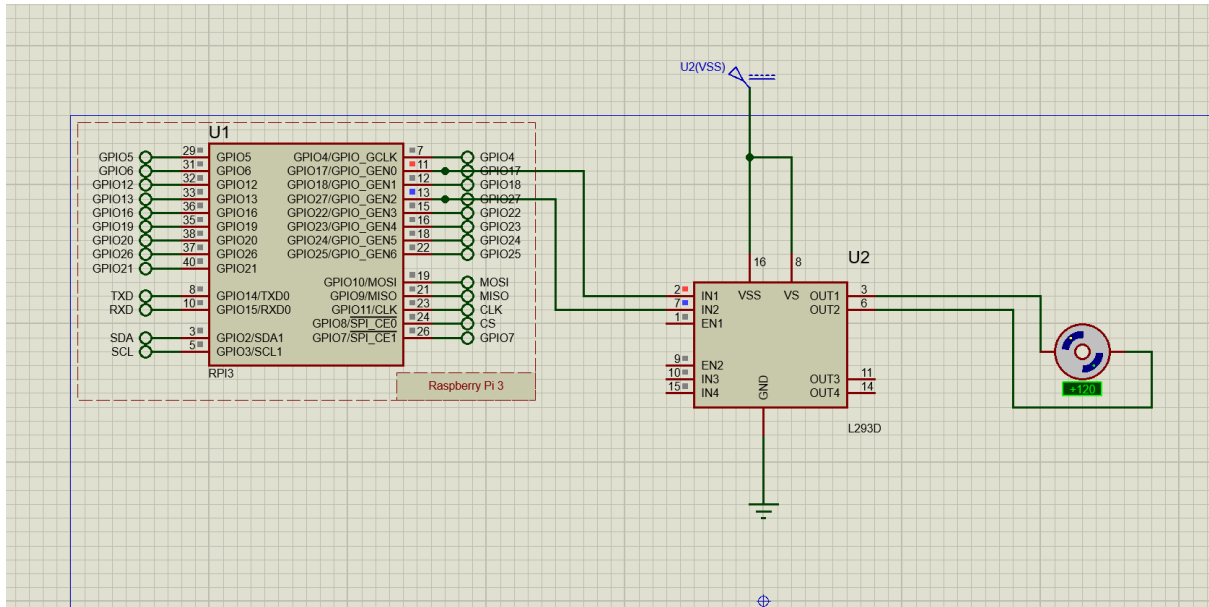
while 1:
    GPIO.output(DC_MOTOR_PIN1, GPIO.HIGH)
    GPIO.output(DC_MOTOR_PIN2, GPIO.LOW)
    time.sleep(5)
    GPIO.output(DC_MOTOR_PIN1, GPIO.LOW)
    GPIO.output(DC_MOTOR_PIN2, GPIO.HIGH)
    time.sleep(5)
```



```
File Project Build Edit Debug System Help
Schematic Capture Source Code
Projects
RPI3(U1)
  Peripherals
    cpu
    storage
    server
    timer
    i2c
    spi
    uart
    twitter
    email
    mqtt
    TensorFlow
  Resource Files
  Source Files
    main.py
main.py
1 # import Library to access GPIO Pins
2 import RPi.GPIO as GPIO
3
4 import time
5
6 GPIO.setmode(GPIO.BOARD) # Conider complete raspberrypi board
7 GPIO.setwarnings(False)
8
9 # PINS
10 DC_MOTOR_PIN1 = 11
11 DC_MOTOR_PIN2 = 13
12
13 # Set pin function as output
14 GPIO.setup(DC_MOTOR_PIN1, GPIO.OUT)
15 GPIO.setup(DC_MOTOR_PIN2, GPIO.OUT)
16
17 while 1:
18     GPIO.output(DC_MOTOR_PIN1, GPIO.HIGH)
19     GPIO.output(DC_MOTOR_PIN2, GPIO.LOW)
20
21     time.sleep(5)
22
23     GPIO.output(DC_MOTOR_PIN1, GPIO.LOW)
24     GPIO.output(DC_MOTOR_PIN2, GPIO.HIGH)
25
26     time.sleep(5)
27
28
```

Step 6: Run the simulator. The motor should run clockwise and anticlockwise at 5 second intervals

Clockwise



AntiClockwise

